WHAT IS CLAIMED IS:

1. A controllable attenuator comprising:

an RF input port;

an RF output port; and

a plurality of diodes disposed in a predetermined network configuration, wherein at least one diode of said plurality of diodes is disposed in a signal path between said RF input port and said RF output port, and wherein the predetermined network configuration provides a constant DC bias voltage at a cathode of each diode of said plurality of diodes.

2. The attenuator of claim 1, wherein said plurality of diodes comprise PIN diodes.

3. The attenuator of claim 1, wherein said predetermined network configuration comprises a π network.

4. The attenuator of claim 3, wherein said at least one diode disposed in a signal path between said RF input port and said RF output port is one diode.

5. The attenuator of claim 4, wherein an anode of said one diode is coupled to a first control signal input via a first inductor to thereby allow DC bias current provided at said first control signal input to reach said anode and to substantially prevent an RF signal appearing at said anode from reaching said first control signal input.

6. The attenuator of claim 3, wherein said at least one diode disposed in a signal path between said RF input port and said RF output port comprises two diodes disposed in a common anode configuration to thereby provide a common anode node.

7. The attenuator of claim 6, wherein said common anode node is coupled to a first control signal input via a first inductor to thereby allow DC bias current provided at said first control signal input to reach said common anode node and to substantially prevent an RF signal appearing at said common anode node from reaching said first control signal input.

8. The attenuator of claim 6, wherein a first diode of said two diodes is coupled in a common cathode configuration with a third diode of said plurality of diodes to thereby provide a first common cathode node, and wherein a second diode of said two diodes is coupled in a common cathode configuration with a fourth diode of said plurality of diodes to thereby provide a second common cathode node.

9. The attenuator of claim 8, wherein an anode of said third diode and an anode of said fourth diode are coupled to a second control signal input.

10. The attenuator of claim 8, wherein an anode of said third diode is coupled to a second control signal, and wherein an anode of said fourth diode is coupled to a third control signal.

11. The attenuator of claim 8, wherein said first common cathode node is coupled to a DC ground through a second inductor to thereby substantially DC ground said first common cathode node.

12. The attenuator of claim 11, wherein said second common cathode node is coupled to DC ground through a third inductor to thereby substantially DC ground said second common cathode node.

13. The attenuator of claim 1, wherein said at least one diode disposed in a signal path between said RF input port and said RF output port comprises two diodes disposed in a common anode configuration to thereby provide a common anode node, wherein said common anode node is coupled to a first control signal input via a first inductor to thereby allow DC bias current provided at said first control signal input to reach said common anode node and to substantially prevent an RF signal appearing at said common anode node from reaching said first control signal input, wherein a first diode of said two diodes is coupled in a common cathode configuration with a third diode of said plurality of diodes to thereby provide a first common cathode node, and wherein a second diode of said two diodes is coupled in a common cathode configuration with a fourth diode of said plurality of diodes to thereby provide a second common cathode node, wherein said first common cathode node is coupled to DC ground through a second inductor to thereby substantially DC ground said first common cathode node, and wherein said second common cathode node is coupled to DC ground through a third inductor to thereby substantially DC ground said second common cathode node, wherein an anode of said third diode and an anode of said fourth diode are coupled to a second control signal input.

14. The attenuator of claim 13, wherein control signals provided to said first and second control signal inputs are DC bias current signals.

15. The attenuator of claim 13, wherein control signals provided to said first and second control signal inputs are provided by a linearizer circuit adapted to control said attenuator for linear attenuation in response to a control signal provided to said linearizer circuit.

16. The attenuator of claim 1, wherein said predetermined network configuration comprises a T network.

17. The attenuator of claim 16, wherein said at least one diode disposed in a signal path between said RF input port and said RF output port comprises two diodes disposed in a common cathode configuration to thereby provide a common cathode node.

18. The attenuator of claim 17, wherein an anode of a first diode of said two diodes is coupled to a first control signal input via a first inductor to thereby allow DC bias current provided at said first control signal input to reach said anode of said first diode and to substantially prevent an RF signal appearing at said anode of said first diode from reaching said first control signal input, and wherein an anode of a second diode of said two diodes is coupled to said first control signal input via a second inductor to thereby allow DC bias current provided at said first control signal input to reach said anode of said second diode and to substantially prevent an RF signal appearing at said anode of said second diode from reaching said first control signal input.

19. The attenuator of claim 17, wherein a third diode of said plurality of diodes is coupled to said common cathode node.

20. The attenuator of claim 19, wherein an anode of said third diode is coupled to a second control signal input.

21. The attenuator of claim 17, wherein said common cathode node is coupled to DC ground through a third inductor to thereby substantially DC ground said common cathode node.

22. A system for providing controllable attenuation of an RF signal, said system comprising:

an RF input port;

an RF output port;

a first control signal input port;

a second control signal input port; and

a plurality of diodes disposed in a predetermined network configuration, wherein at least one diode of said plurality of diodes is disposed in a signal path between said RF input port and said RF output port, wherein an anode of at least one diode of said plurality of diodes is coupled to said first control signal input and wherein an anode of at least one diode of said plurality of diodes is coupled to said second control signal input.

23. The system of claim 22, wherein the predetermined network configuration provides a constant DC bias voltage at a cathode of each diode of said plurality of diodes.

24. The system of claim 22, wherein said predetermined network configuration comprises a π network.

25. The system of claim 24, wherein said at least one diode disposed in a signal path between said RF input port and said RF output port comprises two diodes disposed in a common anode configuration to thereby provide a common anode node, wherein said common anode node is coupled to said first control signal input via a first inductor to thereby allow DC bias current provided at said first control signal input to reach said common anode node and to substantially prevent an RF signal appearing at said common anode node from reaching said first control signal input.

26. The system of claim 25, wherein a first diode of said two diodes is coupled in a common cathode configuration with a third diode of said plurality of diodes to thereby provide a first common cathode node, and wherein a second diode of said two diodes is coupled in a common cathode configuration with a fourth diode of said plurality of diodes to thereby provide a second common cathode node, wherein an anode of said third diode and an anode of said fourth diode are coupled to said second control signal input.

27. The system of claim 26, wherein said first common cathode node is coupled to DC ground through a second inductor to thereby substantially DC ground said first common cathode node, and wherein said second common cathode node is coupled to DC ground through a third inductor to thereby substantially DC ground said second common cathode node.

28. The system of claim 27, wherein a first diode of said two diodes is coupled in a common cathode configuration with a third diode of said plurality of diodes to thereby provide a first common cathode node, and wherein a second diode of said two diodes is coupled in a common cathode configuration with a fourth diode of said plurality of diodes to thereby provide a second common cathode node, wherein an anode of said third diode is coupled to said second control signal, and wherein an anode of said fourth diode is coupled to a third control signal.

29. The system of claim 24, wherein said at least one diode disposed in a signal path between said RF input port and said RF output port is one diode.

30. The system of claim 29, wherein an anode of said one diode is coupled to said first control signal input via a first inductor to thereby allow DC bias current provided at said first control signal input to reach said anode and to substantially prevent an RF signal appearing at said anode from reaching said first control signal input.

31. The system of claim 22, wherein said predetermined network configuration comprises a T network.

32. The system of claim 31, wherein said at least one diode disposed in a signal path between said RF input port and said RF output port comprises two diodes disposed in a common cathode configuration to thereby provide a common cathode node.

33. The system of claim 32, wherein said common cathode node is coupled to DC ground through a third inductor to thereby substantially DC ground said common cathode node.

34. The system of claim 32, wherein an anode of a first diode of said two diodes is coupled to said first control signal input via a first inductor to thereby allow DC bias current provided at said first control signal input to reach said anode of said first diode and to substantially prevent an RF signal appearing at said anode of said first diode from reaching said first control signal input, and wherein an anode of a second diode of said two diodes is coupled to said first control signal input via a second inductor to thereby allow DC bias current provided at said first control signal input to reach said anode of said second diode and to substantially prevent an RF signal appearing at said anode of said second diode from reaching said first control signal input.

35. The system of claim 32, wherein a third diode of said plurality of diodes is coupled to said common cathode node.

36. The system of claim 35, wherein an anode of said third diode is coupled to said second control signal input.

37. A method for providing controllable signal attenuation, said method comprising:

disposing a plurality of diodes in a π network configuration including at least one diode disposed in a series configuration and at least two diodes disposed in a shunt configuration, and wherein said π network configuration couples a signal input node and a signal output node through said at least one series diode;

providing a first attenuation control signal input coupled to an anode of said at least one series diode;

providing a second attenuation control signal input coupled to an anode of at least one diode of said at least two shunt diodes; and

controlling a cathode voltage of each diode of said plurality of diodes to have a substantially constant DC voltage.

38. The method of claim 37, wherein said π network configuration includes at least two diodes disposed in a series configuration, and wherein said π network configuration couples said signal input node and said signal output node through said at least one series diode.

39. The method of claim 37 further comprising:

controlling a first control signal provided to said first attenuation control signal input and a second control signal provided to said second attenuation control signal to provide a desired range of dynamic attenuation while maintaining an impedance of said signal input node substantially constant.

40. The method of claim 39, wherein said desired range of dynamic attenuation is at least 30 dB of dynamic range.

41. The method of claim 40, wherein said desired range of dynamic attenuation is at least 35 dB of dynamic range.

42. The method of claim 39, wherein said impedance of said signal input node is approximately 75 ohms.

43. The method of claim 37, further comprising:

providing a third attenuation control signal input coupled to an anode of at least one diode of said at least two shunt diodes.

44. The method of claim 43, further comprising:

controlling a first control signal provided to said first attenuation control signal input, a second control signal provided to said second attenuation control signal, and a third control signal provided to said third attenuation control signal input to provide a desired range of dynamic attenuation while maintaining an impedance of said signal input node substantially constant and maintaining an impedance of said signal output node substantially constant.

45. The method of claim 44, wherein said impedance of said signal input and said impedance of said signal output are different to thereby provide matching of systems having different characteristic impedances using said π network.

46. The method of claim 37, wherein said controlling a cathode voltage of each diode of said plurality of diodes to have a substantially constant DC voltage comprises:

coupling each said cathode to DC ground through an inductor.

47. A method for providing controllable signal attenuation, said method comprising:

disposing a plurality of diodes in a T network configuration including at least two diodes disposed in a series configuration and at least one diode disposed in a shunt configuration, and wherein said T network configuration couples a signal input node and a signal output node through said at least two series diodes;

providing a first attenuation control signal input coupled to an anode of each of said at least two series diodes;

providing a second attenuation control signal input coupled to an anode of said at least one shunt diode; and

controlling a cathode voltage of each diode of said plurality of diodes to have a substantially constant DC voltage.

48. The method of claim 47, wherein said controlling a cathode voltage of each diode of said plurality of diodes to have a substantially constant DC voltage comprises:

coupling each said cathode to DC ground through an inductor.